Implications from Recent Experience of an Incremental Housing Project in Egypt

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Abstract. The urban population in the developing world will double by the year 2030 increasing the pressure in the housing sector that already suffers from the lack of adequate and affordable housing. Egypt, similar to most countries in the developing world, witnesses a huge deficit in the housing units needed for low-income groups. Since the mid Nineteen Seventies, the Egyptian government adopted and implemented a variety of low-cost housing development strategies including: site and services schemes, core housing projects, partially completed housing units in apartment blocks, and totally finished housing projects. The huge informal housing sector in Egypt has proved the ability of the low-income groups to build for their own-selves. Thus, the incremental housing approach was one of the approaches that were adopted by the Egyptian government to solve the housing problem. Ebny Baitak or “Build Your House” is an incremental housing approach and one of the approaches undertaken by the Ministry of Housing, Utilities, and Urban Development within the National Housing Program to solve the housing problems of low-income groups in Egypt. This paper discusses the recent Egyptian experience in encouraging the participation of low-income groups in the construction process of their own houses through an incremental housing program “Ebny Baitak project”. The paper also derives the implications that could be learned from this experience towards better application in the future.

Keywords. Incremental Housing, Housing Policies, Housing Problems in Egypt, Ebny Baitak Project, Sixth of October City.
1. Introduction

The urban population in the developing world will double by the year 2030, which means that we have less than 20 years to build as much urban housing as was built in the past 6,000 years (Goethert, 2010). During the World Urban Forum 6 (WUF-6) of Naples, Italy, the UN-Habitat announced that the organization is in the process of setting up a “Global Housing Strategy to the Year 2025” (GHS2025). According to the first information sheet circulated by the UN-Habitat, the GHS2025 will advance the Habitat Agenda theme of “adequate shelter for all” and prepare a new vision of housing through a global strategy document emerging from broad-based national, regional and global consultation processes. The inadequate public policies resulted in the lack of adequate and affordable housing, which in turn resulted in over 860 million people around the world living in slums and informal housing (UN-Habitat, 2012). Providing an adequate and affordable shelter for all is a global problem that needs to be addressed and discussed according to the lessons learned from the experiences of the different approaches that are applied all over the world. This paper discusses the recent Egyptian experience in encouraging the participation of low-income groups in the construction process of their own houses through an incremental housing program. The paper also derives the implications that could be learned from this experience towards better application in the future.

2. Housing Problem in Egypt

The provision of affordable housing units is one of the major problems that has been facing all sequential Egyptian governments since the mid of the twentieth century. This long period of dealing with this problem resulted in a huge deficit in the housing units needed for low-income groups. This deficit is estimated at about 3.5 million housing units (Rageh, 2007). This deficit is primarily caused by a steadily growing gap between demand and supply of housing units for lower income groups. The problem is further escalated by rapidly deteriorating housing stock, high rates of population growth, informal housing and slums expansion, regional imbalance, urbanization explosion, low productivity, deficient housing and construction industry, inappropriate formal housing policies and inadequate housing and development legislations (Abdel-Kader and Ettouney, 2012).

In general, the provision of affordable housing in Egypt is characterized by several negative features that resulted in expanding the housing problem in Egypt rather than solving it. These negative features include (Ettouney, 1987; Ettouney and Abdel-Kader, 1989; Rageh, 2007; Sims, 2012):

- Inappropriate locations and settings of affordable housing projects mostly located according to land availability, and neither according to users’ needs nor availability of other urban amenities such as services, work locations, and transportation networks.
The mismatch between the prices of the completed affordable housing units and the abilities of the targeted groups, which resulted in an expanding affordability gap.

Exaggerated adopted building and sites standards of the recent completed formal affordable housing projects.

Since the mid Nineteen Seventies, the Egyptian government adopted and implemented a variety of low-cost housing development strategies including: site and services schemes, core housing projects, partially completed housing units in apartment blocks, and totally finished housing projects (Ettouney and Abdil-Kader, 2011). In most cases and for political reasons, the Egyptian government favored the strategy of the totally completed housing projects as these projects clearly reflect the efforts of the government in solving the housing problem. The government preferred to play the role of providing affordable housing units for low-income groups rather than facilitating the process and allowing others to play this role besides the government so that the gap could be closed. David Sims (2012) in his analysis of Greater Cairo region stated that although there is a much to say about how well Cairo houses itself on average, housing remains a pressing concerns for poor and newly forming households. In addition to those households, Sims mentioned that the percentage of families living in one room in Greater Cairo is about 6 percent, which translates to a total of 2008 population of some 230,000 families or almost one million persons (Sims, 2012). Taking into consideration that Greater Cairo represent about one fifth of the country’s population, housing problem in the country should address the needs of several million inhabitants.

3. Incremental Housing Approach

Incremental housing is an affordable way to provide housing solutions for many families at a minimum housing and services level by integrating the energy of families with the government policies (Goethert, 2010). It starts with a starter core shelter that may be a kitchen/bathroom unit or just a bare lot with utility connection potential. Owners control the expansion of their housing based on their needs and resources. Incremental housing projects are not new as they draw on the experiences of 1970s projects of “site and services” and “core house projects” (Goethert, 2010). Ettouney and Adel-Kader (2011) pointed out that the strategies of incremental housing development and construction are dependent on two key factors: dynamics of development and cost phasing. Goethert (2010) confirmed that the incremental housing approach is the key process of increasing housing stock and housing qualities in most cities. Wakely and Riley (2011) argue that there is a strong case for governments to initiate and support incremental housing strategies as a major component of low-cost housing programs. They pointed out that by encouraging the participation and engaging the householders in the production and management of their housing units and neighborhoods: far more legal and affordable housing units can be produced, cost of development will be shared by people with the government, partnerships that enhance the efficiency of urban management can be built, an integrated urban development strategy can be set, a system of good governance can be created, and finally local communities can be built and strengthened. In order to make...
incremental housing strategies sustainable and successful, several aspects should be addressed and integrated in conjunction with the others. These aspects include: land and location, finance, infrastructure and services, beneficiary selection, site planning and building controls, community organization and asset management, and citywide strategic planning (Wakely and Riley, 2011).

Chavez (2009) examined three case studies of incremental housing programs that took place over three decades in Peru, Latin America in the 1970’s; Burkina Faso, Africa in the 1980’s; and Mauritania, North Africa in the 1990’s. This study demonstrated that incremental housing could work in different countries with different cultures and that it is a resilient approach in the face of economic and political change. Meanwhile, Chavez concluded that incremental housing approach give low-income groups the greatest freedom to build at their own pace and according to their own needs. On the other hand, the main shortcomings of this approach are the know-how of construction techniques, the availability of land, and the appearance of the project as it takes a long time to be completed. Along with the incremental housing approach, other approaches such as upgrading of informal areas and prevention of the formulation of new informal areas must be addressed on a global scale to help solve the housing problems for low-income groups (Chavez, 2009).

The Egyptian experience in incremental housing projects started in the mid Nineteen Seventies with several site and services and core housing projects as shown in Table 1.

<table>
<thead>
<tr>
<th>City</th>
<th>Location</th>
<th>Target Population</th>
<th>Project Start Year</th>
<th>Project Type</th>
<th>Participating Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assiut</td>
<td>South-west district</td>
<td>14,000</td>
<td>1978</td>
<td>Core house</td>
<td>World Bank – DA – GOPP</td>
</tr>
<tr>
<td>Cairo</td>
<td>Helwan</td>
<td>100,000</td>
<td>1980</td>
<td>Core house</td>
<td>USAID – CHF – EAJP</td>
</tr>
<tr>
<td>Ismailia</td>
<td>Al Salam District</td>
<td>40,000</td>
<td>1978</td>
<td>Site and services</td>
<td>UNDP – UKODA – CCP</td>
</tr>
<tr>
<td>10th of Ramadan</td>
<td>14th Neighborhood</td>
<td>8,000</td>
<td>1982</td>
<td>Core house</td>
<td>Ministry of Housing</td>
</tr>
</tbody>
</table>

Table 1. The Egyptian Experience in Incremental Housing Projects
Source: Abdel-Ghany (2009)

These projects did not achieve the desired results and faced several problems. These problems include (Samy, 2004; and Mohamed, 2009):

- The mismatch between the size of plots and built-up areas and the size of the families as cost was the major constraint. This situation resulted in unauthorized expansions to the units outside the building limits and sometimes outside the plots themselves.
- The mismatch between the cost of land and construction and the financial abilities of the low-income groups, which resulted in an expanding affordability gap.
- Designation of plots to middle income groups due to the absence of clear regulations and the manipulation of the designation authorities.

In 2005, the government adopted the National Housing Project to provide affordable housing units for low-income groups. This project incorporated several approaches for affordable housing provision that include the government as a provider for the units, real estate developers by providing them with large-scale plots to be developed according to certain conditions, and the users themselves by providing small plots to beneficiaries so that they can build their own housing units (Mohamed, 2009). All units under the National Housing Program are either 63 sq.m. standard two-bedroom units or 35-40 sq.m. (al ula bel ri’aya) for the very poor through rentals (Sims, 2012). In general, this project follows the previous subsidized government housing projects in the total reliance on state land and the resulting remote and isolated locations far from existing urban agglomerations (Sims, 2012). Table 2 shows the main programs of the National Housing Project and the target number of units under each program.

<table>
<thead>
<tr>
<th>Governorates</th>
<th>Planned</th>
<th>Ebnay Baitak: Land Plots of 150 sq.m. Provided with Infrastructure (Sites and Services) (Number of Plots)</th>
<th>Investors Large Plots to Build Residential Buildings with 63 sq.m. Housing Units for Ownership (Number of Units)</th>
<th>Al ula bel ri’aya (35-40 sq.m.) for rent (Number of Units)</th>
<th>63 sq.m. Housing Units for Rent (Number of Units)</th>
<th>Rural House Ownership (Number of Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Building 63 sq.m. Housing Units for Ownership (Number of Units)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implemented or Under-construction until Nov. 2012</td>
<td>229,304</td>
<td>5,827</td>
<td>37,016</td>
<td>100,000</td>
<td>27,024</td>
<td></td>
</tr>
<tr>
<td>New Cities</td>
<td>Planned</td>
<td>na</td>
<td>96,694</td>
<td>265,008</td>
<td>6,132</td>
<td>14,818</td>
</tr>
<tr>
<td>Implemented or Under-construction until Nov. 2012</td>
<td>97,837</td>
<td>88,357</td>
<td>85,050</td>
<td>6,132</td>
<td>14,818</td>
<td>na</td>
</tr>
<tr>
<td>Total</td>
<td>Planned</td>
<td>na</td>
<td>105,630</td>
<td>265,008</td>
<td>43,148</td>
<td>114,818</td>
</tr>
<tr>
<td>Implemented or Under-construction until Nov. 2012</td>
<td>327,141</td>
<td>94,184</td>
<td>85,050</td>
<td>28,294</td>
<td>28,884</td>
<td>14,563</td>
</tr>
</tbody>
</table>

Table 2. The Main Programs of the National Housing Program (As of November 2012)  
Source: Ministry of Housing, Utilities, and Urban Development (2012)
The above table shows that Ebny Baitak project was one of the major programs of the National Housing Project as it provided more than 90,000 plots that could accommodate 270,000 units.

4. Ebny Baitak Project

The huge informal housing sector in Egypt has proved the ability of the low-income groups to build for their own-selves. Therefore, Ebny Baitak or “Build Your House” approach is considered a tool to encourage the participation of low-income groups in the construction process of their own houses in a planned and controlled environment.

4.1. Project Background: the project started in 2005 with the aim of providing more than 90 thousands plots of an area of 150 sq.m. each. Each plot accommodates a small house that consists of ground plus two upper floors. Each floor has a residential unit of an area of 63 sq.m. in addition to a 12 sq.m. as a stair. The project accommodates a total number of about 270,000 units of an area of 63 sq.m. over the 90,000 plots. The target population of the whole project is more than one million inhabitants. This is why this project is considered a large-scale project especially when compared to the previous projects that were adopted by the government. The plots are distributed in 13 new cities all over the country as presented in the next figure.

<table>
<thead>
<tr>
<th>City</th>
<th>Number of Plots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borj Al Arab Al Jadidah</td>
<td>1383</td>
</tr>
<tr>
<td>Al Sadat</td>
<td>6250</td>
</tr>
<tr>
<td>10th of Ramadan</td>
<td>15781</td>
</tr>
<tr>
<td>Al Salihyyah Al Jadidah</td>
<td>664</td>
</tr>
<tr>
<td>Al Menya Al Jadidah</td>
<td>6771</td>
</tr>
<tr>
<td>Assiut Al Jadidah</td>
<td>5561</td>
</tr>
<tr>
<td>Aswan Al Jadidah</td>
<td>1877</td>
</tr>
<tr>
<td>Badr</td>
<td>3912</td>
</tr>
<tr>
<td>Al Nobarya Al Jadidah</td>
<td>1622</td>
</tr>
<tr>
<td>Bani Sweaf Al Jadedah</td>
<td>5981</td>
</tr>
<tr>
<td>Al Fayoum Al Jaledah</td>
<td>2258</td>
</tr>
<tr>
<td>Suhaj Al Jadera</td>
<td>2669</td>
</tr>
<tr>
<td>6th of October</td>
<td>41965</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96694</strong></td>
</tr>
</tbody>
</table>

Fig. 1. The locations and Number of Plots at Each Location of Ebny Baitak Project
Source: Ministry of Housing, Utilities, and Urban Development (2008)

4.2. The Role of the Government: The government plays an important role in the project by providing the following (Ministry of Housing, Utilities, and Urban Development 2008, and personal meetings with government officials):
• Land allocation and physical planning to determine the areas for the plots and other services and facilities.
• The main infrastructure (water, sanitary, electricity, roads networks,…) and the main services and facilities (schools, commercial services, medical services,…).
• Complete engineering drawings for housing prototypes so that the beneficiaries adhere to these prototypes in order to control the typology of the project.
• A conditioned financial support to each beneficiary for a total of 15,000 EGP (about $ 2,700 as of 2008 exchange rate) paid according to the progress of the construction.
• Financing options through banks and financial institutions.

4.3. The Beneficiary Selection Criteria: The beneficiaries of the project are selected according to the following criteria (Ministry of Housing, Utilities, and Urban Development 2008, and personal meetings with government officials):

• Age: between 21 and 40.
• Income: a proven monthly income for single applicants of no less than 1,000 EGP (about $ 180 as of 2008) and a proven monthly income for married applicants of no less than 1,500 EGP (about $ 270 as of 2008).
• Residence: Applicant must be a resident of the same geographical zone of the city where he/she is applying for a plot.
• The applicant should not have benefitted from any previous governmental housing projects.
• The applicant and his family should not have gotten any plots in any of the cities developed by the Authority of New Urban Communities.
• If the number of applicants exceeds the number of plots, the beneficiaries are selected according to a public lottery.

4.4. The Beneficiary Obligations: after being selected, the beneficiary should satisfy these obligations (Ministry of Housing, Utilities, and Urban Development 2008, and personal meetings with government officials):

• The land is priced at 70 EGP/sq.m. (about $ 13 as of 2008) for a total of 10,500 EGP (about $ 1900 as of 2008) per plot, although it costs the government about 215 EGP/sq.m. (about $ 39 as of 2008). On applying, the applicant pay 10% that is 1,050 EGP (about $ 190 as of 2008) and the other 90% is paid with no interest on seven equal annual installments, which start after one year of designation.
• The beneficiary is exempted from paying the rest of the land installments once the house is completely built and externally finished.
• The beneficiary should get the construction permit within a maximum of 4 months and pay a construction permit fee of 300 EGP (about $ 55 as of 2008).
• The beneficiary is allowed to build a house of ground and two upper floors according to certain prototypes on 50% of the plot area.

• The construction cost for the ground floor semi finished from inside and completely finished from outside is about 60,000 EGP (about $10,800 as of 2008).

• The construction cost for the first floor semi finished from inside and completely finished from outside is about 45,000 EGP (about $8,100 as of 2008).

• The construction cost for the second floor semi finished from inside and completely finished from outside is about 45,000 EGP (about $8,100 as of 2008).

• The government provides the beneficiary with a conditioned financial support for a total of 15,000 EGP (about $2700 as of 2008) paid according to the following schedule:
  - 5,000 EGP (about $900 as of 2008) for the excavation, foundation, and ground floor columns if completed in 3 months.
  - 5,000 EGP (about $900 as of 2008) for the ground floor roof if completed in 3 months.
  - 5,000 EGP (about $900 as of 2008) for the ground floor external finishing if completed in 3 months.

• If the beneficiary is behind the schedule in any stage, he/she loses the subsidy of that stage and the following stages.

• The beneficiary is not allowed to sell or rent the land. However, the beneficiary is allowed to sell the built units.

### 4.5. Design Samples

The plots have equal area of about 150 sqm with similar dimensions of 8.6 m * 17.5 m. All the prototypes are designed at 50% of the plot area with a total area of 75 sqm. Each prototype offers two designs: one for attached units and the second for corner units. Plots are attached together in blocks. Each block consists of even number of plots with a maximum length for the block of 150 m. In addition, blocks are attached back to back for maximum utilization of infrastructure. The government provided several prototypes and then three prototypes were selected for all cities so that the beneficiaries can select their desired prototype. Figures 2, 3 and 4 show the three available prototypes for all cities.
Fig. 2. Ebny Baitak Prototype
Source: Ministry of Housing, Utilities, and Urban Development (2008)

Each unit consists of:
1. Living Area 25.1 sq.m. – 2. Main Bedroom 10.1 sq.m. – 3. Bedroom 10.6 sq.m. – 4. Kitchen 5.25 sq.m. – 5. Bathroom 3.8 sq.m. – 6. Corridor 3 sq.m. – 7. Terrace 2.5 sq.m.

Fig. 3. Ebny Baitak Prototype
Source: Ministry of Housing, Utilities, and Urban Development (2008)

Each unit consists of:
1. Living Area 22.1 sq.m. – 2. Main Bedroom 10.6 sq.m. – 3. Bedroom 10.6 sq.m. – 4. Kitchen 5.25 sq.m. – 5. Bathroom 3.8 sq.m. – 6. Corridor 6 sq.m. – 7. Terrace 2.8 sq.m.
4.6. Incremental Expansion Stages

This housing project adopts the vertical incremental expansion approach. The beneficiary has to build a two-bedroom unit of 63 sq.m. at each stage. In addition, the beneficiary has to complete the ground floor with external finishing in 9 months from getting the construction permit in order to benefit from the government subsidy of 15,000 EGP as shown before. Internal finishing is not an obligation at this stage and can be done at a later stage. Then, the beneficiary can build the first floor as a second stage and finally the third floor as the last stage. The beneficiary can use the upper floors for his own family expansion. Otherwise, he can sell or rent the units of the upper floors to other people and generate financial benefits while providing housing units for other people.
5. Case Study - Sixth of October City

In 1979, the Egyptian government started the development of Sixth of October City as part of the new cities program to relieve of the over population problem in the Greater Cairo Region. The new city is located about 28 km to the west of Cairo and can be reached by the Cairo – Alexandria Desert Road or by the Cairo – El-Fayoum Desert Road. In addition, in 1998, the city had a new access through the 26th of July Axis, which connects the city with downtown Cairo in just a 15 minutes drive. Figure 6 shows the location of the new city and its relation with “Greater Cairo Region”.

Fig. 6. Sixth of October City and Greater Cairo Region
Source: Ministry of Housing, Utilities, and Urban Communities (2000)
Sixth of October City, considered one of the first generation of the Egyptian new cities, is one of the largest new cities in Egypt with an area of 500-squared kilometer, about 119,214 feddan. Its current population, according to the estimates of the Ministry of Housing, Utilities, and Urban Development, is about 1,177,079 inhabitants with a target population of 6 millions in 2027. (Ministry of Housing, Utilities, and Urban Development, 2012)

5.1. Ebny Baitak at Sixth of October

Sixth of October city is one of the major cities for Ebny Baitak project. This city alone accommodates about 42,000 plots that represent about 50% of the total plots assigned for the whole project all over the country. These plots are distributed in seven zones in the southern area of the city as shown in figure 7.
5.2. Current Status of the Project

In 2006, the government started the project by allocating the areas designated to the project to the infrastructure and roads contractors. In 2008, the government started delivering the plots to the beneficiaries and this process was completed in 2009. According to the current official reports, about 80% of the beneficiaries in Sixth of October City already completed the construction of the ground floor of their plots as of April 2012. The incentives and time constraints that the government provided to the beneficiaries encouraged them to move forward with the construction process. (Ministry of Housing, Utilities, and Urban Development 2012, Personal Meetings with Government Officials, and Site Visits)

On the other hand, the roads and infrastructure are not completed yet. Most of the water and sanitary major networks are completed. However, the electricity network is far behind. In addition, the roads network will be completed after all other networks are completed. The overall percentage of roads and infrastructure completed does not exceed 60%. This represents a major challenge for the success of the project. Houses are there, but people cannot live in them because of the absence of infrastructure. This situation will have a negative impact on any future phases of the project. Table 3 shows the status of roads and infrastructure works in the different zones of the project. (Ministry of Housing, Utilities, and Urban Development 2012, Personal Meetings with Government Officials, and Site Visits)

<table>
<thead>
<tr>
<th>Zone</th>
<th>Percentage Completed</th>
<th>Services Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water, Sanitary, Electricity and Roads 1 (Preparation)</td>
<td>Roads 2: (Base and Asphalt)</td>
</tr>
<tr>
<td>1</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>4</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>6</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>7</td>
<td>60%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 3. Ebny Baitak Project: Infrastructure and Services Percentage of Completion
Source: Ministry of Housing, Utilities, and Urban Development (2012), and Personal Meetings with Government Officials.
The following pictures show samples of the housing buildings at Ebny Baitak project at Sixth of October City.

Fig. 8. Housing Buildings at Ebny Baitak Project at Sixth of October City – April 2012  
Source: Ministry of Housing, Utilities, and Urban Development (2012)

The following pictures show samples of the services buildings at Ebny Baitak project at Sixth of October City.
Fig. 9. Services Buildings at Ebny Baitak Project at Sixth of October City (Left: Commercial Center – Right: Medical Center)
Source: Ministry of Housing, Utilities, and Urban Development (2012)

The following pictures show the infrastructure situation at Ebny Baitak project at Sixth of October City.

Fig. 10. Infrastructure Works are Far Behind the Houses Construction
Source: Ministry of Housing, Utilities, and Urban Development (2012)
5.3. Problems of Application

The project encountered several problems that affected its progress and results. These problems can be summarized in the following points:

- The prototypes are almost standard in all different locations and do not reflect either the differences among these locations or the different needs of expected residents in each location.

- The selection of the beneficiaries based on their proven income only allowed people with higher unofficial income, which is common in Egypt, to apply for plots for investment purposes.

- The areas allocated to the project are not served by public transportation lines, which increased the delivery cost for labor and also for construction materials. This situation resulted in a general increase in the construction cost. In addition, this situation will make it difficult for the beneficiaries to use their units upon completion.

- The delay of the provision of the infrastructure to the extent that the residential buildings are built and the infrastructure is not available yet. As a result, the beneficiaries are not able to use their units.

- The absence of security in the areas of the project resulted in the dependence on certain families from the surrounding areas to provide security against monthly fees.

- The lack of accuracy in survey works, which resulted in some difficulties in defining the boundaries and areas of the allocated plots. Even the governmental works suffered from this problem as shown in figure 11.

Fig. 11. Electricity Room in the Axis of the Road
Source: Ministry of Housing, Utilities, and Urban Development (2012)

- The government is managing the infrastructure works, while the beneficiaries are managing the construction works of their own plots. There is no project management body for the whole project. This situation resulted in destroying parts of the infrastructure networks during the excavation and foundation phases of the construction works.
Most of the financing is self provided, which makes it difficult for a large sector of low-income people to apply for the project. Conditions for available financing options do not match with the financial capabilities of targeted residents.

6. Implications for Future Projects

The preliminary results of the project along with the problems of application suggest some implications that will improve the outcome of similar. These implications can be summarized in the following points:

- Selecting the beneficiaries according to several criteria. The selection of the beneficiaries should review, besides their proven financial income, their unofficial income, and their social and educational levels to make sure that the project serves the targeted sector.

- Emphasizing the characteristics of expected residents and their requirements in the prototypes designs. The design of the prototype units should reflect the needs of the expected residents in size, finishing, privacy, and elevations elements.

- Emphasizing the identities and natural characteristics of the different locations in the prototypes designs.

- Adopting the approach of participatory planning. The role of the residents in the current project is limited to the construction of their units. Residents should be encouraged to participate in the process from its early stages to guarantee that the new development will meet their needs.

- Maintaining a multidimensional balance between the completion of the infrastructure with all its aspects and the delivery of the plots to the beneficiaries. This will help the beneficiaries control the cost of construction and expedite its process. In addition, this will help the beneficiaries use their units once built and finished.
• Providing effective housing finance mechanisms. Housing finance can be provided to the beneficiaries through the mortgage system by using the housing unit itself as a way of insuring the coverage of the loan.

• Providing effective transportation facilities. The area of the project should be served by public transportation system, which will help the beneficiaries during the construction period and also encourage them to live in the area after completing their houses.

• Providing a management body to manage the development of the area. This management body will facilitate the coordination between the infrastructure works and the construction of the units. It will also guide the beneficiaries through the whole process to guarantee better outcome.

7. Conclusion

Ebny Baitak project intended to provide an opportunity for low-income groups to build their own houses in an affordable manner. However, the cost of the land, even with the government subsidy, and the construction cost are far beyond the abilities of low-income groups. This resulted in unofficial sale transactions of the plots for other people mostly of the middle-income groups. Meanwhile, the government has not fulfilled its obligation yet, to provide the infrastructure to the plots so that the people can use their units. Thus, this approach seems more appropriate for providing housing units for a category of the middle-income groups giving that the government could cancel the subsidy and provide infrastructure in time. In conclusion, this project had a limited impact in solving the housing problems of the low-income groups in Egypt.

References


ABDEL-KADER, NASSAMAT and ETTOUNEY, SAYED M. 2012, Decrying Sensible Housing Developments – Recapitulating Incremental, Partially Completed Low-Cost Housing, Egypt Decades Later, XVIII IAHS, World Congress on Housing, 16-19 April, Istanbul, Turkey.


ETTOUNEY, SAYED M. and ABDEL-KADER, NASAMAT 2011, Incremental Housing Development 2010: Lowering the Cost, Lowering-not the Standards – a


MINISTRY OF HOUSING, UTILITIES, AND URBAN DEVELOPMENT, GENERAL ORGANIZATION FOR PHYSICAL PLANNING, CENTER FOR GREATER CAIRO REGION 2012, Ebny Baitak Project – Sixth of October City, Ministry of Housing, Utilities, and Urban Development, Cairo, Egypt. (Arabic)

MINISTRY OF HOUSING, UTILITIES, AND URBAN DEVELOPMENT, GENERAL ORGANIZATION FOR PHYSICAL PLANNING 2008, National Housing Project – Ebny Baitak, Ministry of Housing, Utilities, and Urban Development, Cairo, Egypt. (Arabic)

MINISTRY OF HOUSING, UTILITIES, AND URBAN COMMUNITIES, GENERAL ORGANIZATION FOR PHYSICAL PLANNING, CENTER FOR GREATER CAIRO REGION 2000, Greater Cairo Atlas, Ministry of Housing, Utilities, and Urban Communities, Cairo, Egypt. (Arabic)


RAGEH, ABU ZAED. 2007, El Omran El Misry - Egyptian Urbanism - Egypt 2020, Third World forum, Academic Bookshop Press, Volume 1, Cairo, Egypt. (Arabic)

SAMY, KHALID M. and NORELDIN, MOHAMED. 2004, The Evaluation of Site and Service Policy as One of the Approaches to Solve the Problem of Low-Income Housing in Egypt, High Commission for the Development of Arriyadh, Second Housing Symposium, Arriyadh, Saudi Arabia. (Arabic)

SIMS, DAVID. 2012, Understanding Cairo: The Logic of a City Out of Control, The American University in Cairo Press, Cairo, Egypt.

UN-HABITAT 2012, Global Housing Strategy for the year 2025 – Information Sheet – GHS2025, UN-Habitat, Available online,